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5.4 AGRICULTURE/SOILS

This section presents information on the agriculture and soils resources in the region around the Watson Cogeneration Steam and Electric Reliability Project (Project), and the potential impacts of the Project on those resources. Recommendations are provided for mitigation of impacts on agriculture and soils resources.

Section 5.4.1, Affected Environment, describes the affected environment. The affected environment for soils and agriculture is described in Section 5.4.1.1, Soil Resources, and Section 5.4.1.2, Agriculture and Prime Farmland, respectively. Section 5.4.2, Environmental Consequences, discusses the potential environmental effects of the Project on agriculture and soils. Effects are assessed for both the construction and the operation of the Project. Mitigation measures for agricultural and soils-related effects are addressed in Section 5.4.4, Mitigation Measures. The consistency of the Project with applicable laws, ordinances, regulations, and standards (LORS) is discussed in Section 5.4.5, Applicable Laws, Ordinances, Regulations, and Standards.

5.4.1 Affected Environment

The Project Site is a 2.5-acre brown field site located within the boundary of the existing Watson Cogeneration Facility, which is a 21.7-acre area within the 428-acre parcel further described as Assessors Parcel Number (APN) 7315-006-003, 1801 Sepulveda Boulevard, Carson, California, 90745 and is integral to BP's existing Carson Refinery (BP Refinery). The street address of the Project Site is located within the boundary of the existing Watson Cogeneration Facility at 22850 South Wilmington Avenue, Carson, California. Figure 3-1, Regional Map, depicts the Project Site and surrounding area. An existing warehouse/maintenance shop on a portion of the site will be removed as part of the Project. The Project Site is located approximately 0.7 mile south of the 405 Freeway, roughly bounded by Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the east.

The Project Site elevation is approximately 32 feet above mean sea level (MSL). Because the site is located within the existing refinery property boundary, the Project Site and surrounding areas are highly developed, and have been subject to disturbance for many years.

The Project's primary objective is to provide additional process steam in response to the refinery's process steam demand. The Project complements the existing cogeneration facility located within the confines of the refinery. The existing facility has four GE 7EA combustion turbine generators (CTGs), four heat recovery steam generators (HRSGs), and two steam turbine generators. The Project consists of adding a fifth CTG/HRSG to the existing configuration and is referred to as the "fifth train."

The Construction Laydown and Parking Area is a paved 25-acre parcel located approximately 1 mile southeast of the Project Site, at the northeast corner of East Sepulveda Boulevard and South Alameda Street. The area is owned by BP and is currently used as a truck parking and staging area.

No off-site improvements associated with the Project, such as water supply, natural gas or wastewater pipelines, are currently planned for the Project. The Project will connect to the existing supply pipelines currently located at the facility.

5.4.1.1 Soil Resources

The soils in the Project Area are described and mapped at the level of “mapping units,” which are defined to the approximate level of detail appropriate for soil management decision-making. The location and properties of the soil-mapping units are based on interpretation of the State Soil Geographic Database (STATSGO) for California prepared by the Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (NRCS 2006). The Los Angeles Department of Public Works field-verified the STATSGO data by conducting infiltrometer tests on each soil type for the purpose of developing runoff coefficient curves for the Los Angeles County Hydrology Manual (LADPW 2006). Two soil-mapping units consisting of four soil series were identified in the Project Area (Figure 5.4-1, Soil Types): Hanford, Ramona, Sorrento, and Zamora. The soil-mapping unit descriptions are summarized in Table 5.4-1, Soil-Mapping Units – Description and Properties. In addition to these soil series, Urban Land soils were also identified by STATSGO.

Soil Series Units

The following paragraphs describe the soil series units located within the Project Site, as presented on Figure 5.4-1, Soil Types, and summarized in Table 5.4-1, Soil-Mapping Units – Description and Properties.

Hanford. The Hanford series consists of very deep, well-drained soils that formed in moderately coarse textured alluvium, predominantly from granite. Hanford soils typically occur on stream bottoms, floodplains, and alluvial fans between elevations of 150 to 3,500 feet. Slopes range from 0 to 15 percent. The Hanford series has sandy loam or fine sandy loam surface soils and fine sandy loam and sandy loam subsurface soils. This series has negligible to low runoff rates and moderately rapid permeability.

Ramona. The Ramona soils occur on nearly level to moderately steep slopes associated with terraces and fans between elevations of 250 to 3,500 feet. These deep soils formed in alluvium derived mostly from granitic and related rock sources. Typically, Ramona soils have sandy loam and fine sandy loam surface soils and sandy clay loam and fine sandy loam subsurface soils. Ramona soils are well-drained, have slow to rapid runoff rates, and moderately slow permeability.

Sorrento. The Sorrento series consists of very deep, well-drained soils that formed in alluvium mostly from sedimentary rocks. Sorrento soils are located on alluvial fans and stabilized floodplains that have slopes of between 0 to 15 percent. The Sorrento series have heavy loam surface soils and heavy loam and loamy fine sand subsurface soils. Sorrento soils are well drained, have negligible to medium runoff rates, and moderate to moderately slow permeability.

Table 5.4-1
Soil-Mapping Units – Description and Properties

Soil Series	Surface Texture	Drainage	Permeability	Erosion Factor K ¹	Runoff	Hydrologic Soil Group ²	Land Capability Class (non-irrigated) ³	Surface pH	Limitations
Hanford	Sandy loam or fine sandy loam	Well drained	Moderately rapid	0.32 (moderate)	Negligible to low	A	3e	6.0 (becomes more alkaline with depth)	
Ramona	Sandy loam or fine sandy loam	Well drained	Moderately slow	0.24 (moderate)	Slow to rapid	C	3e	6.0	Surface may be very hard when dry
Sorrento	Heavy loam	Well drained	Moderate to moderately slow	0.20 (moderate)	Negligible to medium	B	3e	8.0	
Zamora	Fine sandy loam, loam, silt loam, or light clay loam	Well-drained	Moderately slow	0.28 (moderate)	Slow to medium	C	3e	6.3 (becomes more alkaline with depth)	

Sources: NRCS, 2007b ; 2007c.

Notes:

1. *Erosion factor K* indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

2. *Hydrologic soil groups* are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms. The four hydrologic soil groups are:

Group A - Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils consist mainly of deep, well-drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B - Soils having a moderate infiltration rate when thoroughly wet. These soils consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C - Soils having a slow infiltration rate when thoroughly wet. These soils consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D - Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These soils consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

3. *Land Capability Classes*: **Class 3e** soils have severe limitations that reduce the choice of plants or require special conservation practices, or both. **Subclass e** indicates susceptibility to erosion is the dominant problem or hazard affecting their use.

Zamora. Zamora soils are located on nearly level (0 percent) to strongly sloping (nine percent) fans and terraces between elevations of 30 to 1,300 feet. The soils are formed in alluvium from material weathered from mixed sedimentary rocks. The Zamora series soils typically have fine sandy loam, loam, silt loam, or light silty clay loam surface soils and clay loam, silty clay loam, and gravelly loam subsoils. Zamora soils are well drained, have slow to medium runoff rates, and moderately slow permeability.

Urban Land soils. Urban Land is soil that has been modified by disturbance of the natural layers with additions of fill material that is several feet thick to accommodate large industrial and housing installations or other types of urban development.

Project Site Soils

The native soils present at the Project Site consist of Zamora and Ramona series soils and Urban Land soils; however, most soils in the Project Area consist of fill material with native soils below the fill. There are no major limitations and few overall limitations for these soils. Permeability of Zamora series soils is moderately slow with slow to medium runoff rates. Permeability of Ramona series soils is moderately slow with slow to rapid runoff rates. Since the Project Site is relatively flat, the hazard of water erosion for these soils is slight. Before Project construction activities are started, a site-specific geotechnical investigation will be performed at the Project Site. Appendix L, Geotechnical Report, contains a site-specific geotechnical investigation that was performed at the site in 1986, before the construction of the Watson Cogeneration Facility.

Transmission Lines

No additional transmission lines are planned for the Project. The Project will not require alteration of existing off-site transmission lines but will connect existing on-site transmission lines to a new 69kV gas insulation substation (GIS). The design includes a 13.8–69kV Generator Step-Up Transformer connected to the 69kV switchgear by cables. The 69kV switchgear is connected to the 230kV GIS substation through two 69–230kV transformers utilizing 230kV solid dielectric cables. Power is exported to the grid from the existing Watson Cogeneration Facility by the two existing transmission lines to the Hinson Substation.

Off-site Pipelines

No new off-site pipelines are planned for the Project.

Natural Gas Pipelines. Natural gas will be delivered to the Project Site from an existing pipeline. A large-diameter natural gas pipeline currently runs through the center of the Project Site. Consequently, portions of this pipeline may need to be relocated before it is tied into the current system.

The specific pipeline relocation route has not yet been determined, but soils in the vicinity of the Project Site include the previously described soils in the Hanford, Ramona, Sorrento, and Zamora series. Urban Land soils and surface-level fill material also make up the soils present in the vicinity of the Project Site. There are no major limitations and few overall limitations for these soils. The permeability of Hanford series soils is moderately rapid with negligible to low runoff rates. The permeability of Ramona series soils is moderately slow with slow to rapid runoff rates. The permeability of Sorrento series soils is moderate to moderately slow with

negligible to medium runoff rates. The permeability of Zamora series soils is moderately slow with slow to medium runoff rates. Due to the relatively flat nature of the Project Site, the hazard of water erosion for these soils is slight. Furthermore, existing drainage canals are present in the Project Area, so the probability of flooding is minimal

Sewer Pipelines. The Project will utilize the existing sewer pipeline, which connects to the Los Angeles County Sanitation District. No new sanitary systems are planned for the Project.

Water Pipelines. The existing facilities will supply all water necessary for the construction and operation of the Project. No new water pipelines are planned for the Project.

Worker Parking and Equipment Staging Sites

The Construction Laydown and Parking Area is a 25-acre paved lot at the northeast corner of the intersection of East Sepulveda Boulevard and South Alameda Street. This area is not expected to need any preparation. Craft labor and management personnel for the construction of the Project will park at this designated area.

Designated areas within the Construction Laydown and Parking Area will be used for off-loading and staging for deliveries of material, supplies, and equipment.

5.4.1.2 Agriculture and Prime Farmland

Four categories of important farmlands are federally regulated by the U.S. Department of Agriculture (USDA) under the Farmland Protection Policy Act: (1) Prime Farmland, (2) Unique Farmland, (3) Farmlands of Statewide Importance, and (4) Farmlands of Local Importance. USDA identifies important farmlands as soils that support the crops necessary for the preservation of the nation's domestic food and other supplies (specifically, the capacity to preserve high yields of food, seed, forage, fiber, and oilseed with minimal agricultural amendment of the soil, adequate water, and a sufficient growing season). Several USDA and other federal natural resource programs, permits, and regulations require the identification of important farmlands.

The California Land Conservation Act, also known as the Williamson Act, preserves agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. The act establishes an arrangement whereby private landowners contract with counties and cities to voluntarily restrict land to agricultural and open space uses.

The Project Site is in a portion of Los Angeles County designated as "Urban and Built-Up Land," which is defined as land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately six structures per 10-acre parcel. The State of California Department of Conservation's Farmland Mapping and Monitoring Program does not identify any important farmlands in the Project Area (California Department of Conservation 2002). The NRCS also confirmed that no important farmlands exist in the Project Area (NRCS 2007a). The Project is consistent with existing land use zoning and does not convert farmland to non-agricultural uses.

5.4.2 Environmental Consequences

5.4.2.1 *Construction-Related Effects*

The total acreage to be disturbed during Project construction will be approximately 2.5 acres. No land disturbance will be necessary for the Construction Laydown and Parking Area, as it is an existing paved lot. Also, no land disturbance will be necessary for any off-site linear facilities.

Significance criteria have been selected based on California Environmental Quality Act of 1970 (CEQA) Guidelines and the performance standards adopted by responsible agencies. An effect may be considered significant for soil or agriculture if the Project results in the following.

- Substantial soil erosion or loss of topsoil, degradation of soils or farmland, changes in topography, or unstable soil conditions.
- Degradation or loss of available agricultural land, agricultural activities, or agricultural land productivity in the Project Area.
- Alteration of agricultural land characteristics due to Project air emissions.
- Landslide, lateral spreading, subsidence, liquefaction, or collapse (because Project is located in unstable soil or soil that would become unstable because of the Project).
- Substantial risk to life or property (because Project is located on expansive soil, as defined in Table 18-1 of the Uniform Building Code (International Conference of Building Officials 1994)).
- Placement of septic tanks or alternative wastewater disposal systems on soils incapable of adequately supporting these systems, where sewers are unavailable for the disposal of wastewater.
- Conversion of Prime or Unique Farmland or Farmland of Statewide Importance to non-agricultural use.

Construction effects on soil resources may include increased soil erosion and soil compaction. Soil erosion causes the loss of topsoil and can increase the sediment load in the surface receiving waters downstream of the construction site. The magnitude, extent, and duration of this construction-related effect depends on the erodibility of the soil (which is slight on the Project Site, as discussed above), the proximity of the construction activity to a receiving water, the degree of contamination of the excavated soil stockpiles, the construction methodologies, the duration of construction, and the season of construction.

The use of erosion control best management practices (BMPs) to control water and wind erosion during construction activities and the placement of impervious surfaces on and/or the implementation of BMPs for disturbed areas within the Project Site will effectively control soil loss during and after construction (Section 5.4.4, Mitigation Measures). Consequently, quantitative calculations of potential soil loss using the Universal Soil Loss and Chapin Wind Erosion Equations, which are typically used to quantify water- and wind-induced soil loss for agricultural operations, were not considered appropriate for the Project. The potential effects of the Project on soil resources can be divided into those related to Project construction and those related to Project operation.

5.4.2.2 Project Site

The construction activities (including site preparation) at the Project Site are estimated to require about 26 months. Land disturbances related to development activities will be conducted on the 2.5-acre Project Site. No land disturbances will occur in the Construction Laydown and Parking Area. Excavation work will consist of the removal, storage, and/or disposal of earth, sand, gravel, vegetation, organic matter, loose rock, boulders, and debris to the lines and grades necessary for construction. Materials suitable for backfill will be stockpiled at designated locations using proper erosion protection methods. Excess material will be removed from the site and disposed of at an acceptable location. If contaminated material is encountered during excavation, the material will be disposed of in accordance with applicable LORS. During the construction phase of the Project, erosion and sediment control measures, such as mulching, jute netting, culverts, sediment detention basins, etc., will be temporarily installed, as required by local regulations.

Site preparation for construction activities will include the demolition or removal of some known existing underground man-made structures located on the Project Site, including warehouse foundations, piping systems, and maintenance access roads. Waste materials will be recycled wherever possible. Any residual demolition wastes will be disposed of in an approved construction waste landfill. Contaminated excavated soils, if encountered, will be stored temporarily in construction zones and later removed for disposal or treatment and recycling. Prior to the excavation, a pre-assessment will be conducted to determine if the excavation will need to follow 40 CFR 63 Subpart GGGGG and Air Quality Management District Rule 1166 that regulate air emissions from excavation of soil contaminated with volatile organic compounds. Management of contaminated excavated materials will be conducted in accordance with all applicable federal, state, and local regulations, as described in Section 5.14, Waste Management. Therefore, the effect air and to the potential receiving waters will be less than significant. As applicable, the engineering fill will be imported to replace excavated materials that are not suitable for replacement.

The present Project Site consists of asphaltic paving that is level with the adjacent Watson facilities. Asphalt material will be removed to prepare the site for the installation of the foundations and other underground facilities. The foundation excavations will require that approximately 7,000 cubic yards of existing fill material be removed and stockpiled. Movement of material will be limited to that required for a level site for the Project equipment and facilities. No fill is anticipated to be needed, but in the event fill is required, on-site material is expected to be adequate, subject to final geotechnical evaluation.

Foundation excavations will be prepared as required for the CTG, transformers, and other heavy equipment. Previous geotechnical reports prepared for the Project Site (Crandall 1986) (Appendix L, Geotechnical Report) indicate that no water was found during subsurface investigations to a depth of 65 feet. Before excavation, appropriate reconnaissance will be performed to locate existing underground structures and appropriate measures will be taken to protect or remove the existing structures as required.

Areas to be backfilled will be prepared by removing unsuitable material and rocks. The bottom of an excavation will be examined for loose or soft areas. Such areas will be excavated fully and backfilled with compacted fill. Backfilling will be done in layers of uniform, specified thickness. The soil in each layer will be properly moistened to facilitate compaction to achieve

the specified density. To verify compaction, representative field density and moisture-content tests will be performed during compaction. Structural fill supporting foundations, roads, and parking areas will be compacted to at least 95 percent of the maximum dry density as determined by American Society for Testing and Materials publication D698 (ASTM 2007). Embankments, dikes, bedding for buried piping, and backfill surrounding structures will be compacted to a minimum of 90 percent of the maximum dry density. Backfill placed in remote and/or unsurfaced areas will be compacted to at least 85 percent of the maximum dry density.

The planned location of the Project is generally flat, at an elevation of approximately 32 feet above MSL, and is above the 100-year flood elevation, as established by the Federal Emergency Management Administration. The gentle topography and localized grading in the Project Site will limit soil erosion. Although effects to soils, receiving waters, and agricultural lands are considered to be minimal, the mitigation measures outlined in Section 5.4.4, Mitigation Measures, will further reduce to less-than-significant levels the effects to soil resources resulting from the construction of the Project.

Short-term increases in soil erosion are expected to occur during the construction phase. Project-related soil erosion will be minimized through the implementation of the erosion control measures described in Section 3.5, Civil/Structural Features, and Section 5.4.4, Mitigation Measures. Therefore, effects from soil erosion are expected to be insignificant.

Site preparation and the construction of the Project may potentially involve excavation of contaminated soils.

A construction Storm Water Pollution Prevention Plan (SWPPP) will be prepared to indicate how storm water discharges from construction activities will be subject to BMPs. Any storm water discharges that may occur will be in compliance with applicable LORS.

After construction, wind and water erosion on developed portions of the Project Site will be reduced because the site will be compacted, covered with asphalt, concrete, and/or gravel, and drainage will be controlled through a storm drainage system.

The operation of the Project will expose soils and vegetation to increased levels of air pollutants, as discussed in Section 5.2, Air Quality. Emissions from a generating facility, especially nitrogen oxide (NO_x) from the combustors or drift from the cooling tower cells, may have an adverse effect on soil-vegetation systems in the Project vicinity. These emissions are primarily a concern when environments that are highly sensitive to nutrients or salts, such as serpentine habitats, are downwind of a facility.

The dominant land uses in and around the Project Site are industrial, commercial, and residential. The presence of ultramafic (serpentine) bedrock was not identified in the Project Site. The addition of small amounts of NO_x to the industrial and commercial areas would be insignificant, given the scarcity of vegetation within the Project Site. In more vegetated residential areas, the addition of small amounts of NO_x from the Project would be insignificant compared to the fertilizers, herbicides, and pesticides that homeowners typically use.

No significant effects to agriculture or soils are anticipated from the construction of the Project.

5.4.2.3 *Transmission Lines*

No new transmission lines are planned for the Project. The 69kV GIS required for the Project will be constructed on the Project Site on land that is highly disturbed, so the effects of Project construction on native soils are expected to be insignificant.

5.4.2.4 *Off-Site Pipelines*

No off-site pipelines are planned for the Project, so no effects to soils, receiving waters, or agricultural lands are expected.

5.4.2.5 *Construction Laydown and Parking Area*

The Construction Laydown and Parking Area is a 25-acre parcel located southeast of the Project Site. This area is entirely paved and is not expected to require any preparation. As a result, no significant effects to native soils, receiving waters, or area agricultural lands are anticipated at or near the site.

5.4.3 Cumulative Effects

Soil erosion and sedimentation effects associated with the Project will not be significant; thus, cumulative effects to native soils, receiving waters, or area agricultural lands will be negligible.

Section 5.9, Land Use, provides a list of the current and proposed projects in the vicinity of the project.

5.4.4 Mitigation Measures

The Project Site and adjacent properties are currently in industrial use and are surrounded by areas of other industrial uses, vacant land, and commercial and residential development. Anticipated effects to the surrounding area from the construction of the Project will be minimized by the implementation of erosion control plans and SWPPPs and through the implementation of the mitigation measures listed below.

Typically, temporary erosion control measures include revegetation, slope stabilizers, dust suppression, construction of berms and ditches, and sediment barriers. During construction of the Project, employment of control measures will minimize the wind-blown erosion of soil from the Project Site. Spraying clean water on the soil in construction areas will help to suppress dust.

Because the Project Site is relatively level, standard surface erosion control techniques should be effective. Sediment barriers such as straw bales or silt fences will slow runoff and trap sediment. Generally, placement of barriers will occur at the base of exposed slopes below disturbed areas. Placing barriers around the Project Site and the property boundary prevents sediment from leaving the site. Runoff retention basins, drainage diversions, and other large-scale sediment traps are not expected to be needed because of the level topography of the site. Soil stockpiles generated during construction will be covered and protected from rainfall and wind.

Due to the flat topography of the Project Site and the existing runoff collection and drainage system, no additional long-term measures are either warranted or necessary.

The Watson Cogeneration Company (Applicant) will commit to implementing the following mitigation measures to reduce Project-related effects to soils during construction.

SOIL-1: Grading Operations

Grading operations will be conducted in compliance with the City of Carson Grading Ordinance.

SOIL-2: Erosion Control Plan

A detailed Erosion Control Plan will be prepared and implemented before construction. This plan may be a component of the Construction SWPPP.

SOIL-3: Soil Erosion/Dust Generation

Soil erosion/dust generation will be limited by wetting areas of active construction with disturbed soil (including parking areas) with water or by applying dust palliatives (soil binders).

SOIL-4: Drainage Control Measures

Drainage control measures and grading will be implemented at the Project Site in accordance with the Construction SWPPP.

With implementation of the mitigation measures, no significant, unavoidable, or adverse effects are anticipated to soil resources.

5.4.5 Applicable Laws, Ordinances, Regulations, and Standards

The following LORS are applicable to protection of soils and agricultural resources and surface water quality from Project-induced erosion effects. Table 5.4-2, Summary of LORS – Agriculture/Soils, provides a summary of the applicable LORS. As discussed below, the Project will be constructed and operated in accordance with applicable LORS and permit conditions.

**Table 5.4-2
Summary of LORS – Agriculture/Soils**

LORS	Applicability	Conformance (AFC Section)
Federal		
The Federal Water Pollution Control Act of 1972; Clean Water Act of 1977	Establishes requirements for any facility or activity that has or will discharge waste (including sediment due to accelerated erosion) that may interfere with the beneficial uses of receiving waters	5.4.2 5.4.2.1
United States Department of Agriculture, Soil Conservation Service, <i>National Engineering Handbook</i> (1983), Sections 2 and 3	Planning, design, and construction of soil conservation practices	5.4.2 5.4.2.1

Table 5.4-2
Summary of LORS – Agriculture/Soils

LORS	Applicability	Conformance (AFC Section)
State		
Cal. Public Resources Code (PRC) Section 25523(a); California Code of Regulations (CCR) Sections 1752, 1752.5, 2300–2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (i)	Protection of Environmental Quality	5.4.2 5.4.2.2
California Environmental Quality Act, PRC Section 21000 <i>et seq.</i> ; Guidelines for Implementation of the California Environmental Quality Act (CEQA), 14 CCR Sections 15000–15387, Appendix G	Substantial soil erosion or loss of topsoil; degradation or loss of available agricultural land, agricultural activities, or agricultural land productivity in the Project Area; alteration of agricultural land characteristics due to plant air emissions; or conversion of prime or unique farmland, or farmland of statewide importance, to non-agricultural use	5.4.2 5.4.2.2
California Porter-Cologne Water Quality Control Act of 1952: Cal. Water Code, Section 13260–13269; 23 CCR Chapter 9	Requires adequate protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls	5.4.2 5.4.2.2
Williamson Act - Land Conservation Act of 1965: California Government Code Title 5, Part 1, Chapter 7, Sections 51200– 51295	Provides for lowered property taxes for lands maintained in agricultural and certain open space uses	5.4.1.1
Local		
Los Angeles County Grading Guidelines (California Building Code Appendix J)	Regulations describing submittal requirements related to grading projects	5.4.2 5.4.2.2
Los Angeles County Building Code, Title 26	Regulations pertaining to building permits	5.4.2 5.4.2.2
City of Carson General Plan, Air Quality Element, Chapter 10: City of Carson Development Services 2004	Air quality that meets state and federal standards	5.4.2 5.4.2.2

Sources: 33 U.S.C. 1251–1387 (1972); USDA Soil Conservation Service, 1983; California Public Resources Code Sections 25523(a) and 21000 *et seq.*; 14 CCR Chapter 3; 23 CCR Chapter 9; California Land Conservation Act (1965) California Government Code Title 5, Part 1, Chapter 7, Sections 51200–51295] Los Angeles County (2008a, 2008b); City of Carson Development Services 2004.

Notes:

CCR = California Code of Regulations
 CEQA = California Environmental Quality Act of 1970
 LORS = laws, ordinances, regulations, and standards
 NRCS = Natural Resources Conservation Service
 PRC = Public Resources Code
 U.S.C. = United States Code
 USDA = U.S. Department of Agriculture

5.4.5.1 Federal

The Federal Water Pollution Control Act of 1972; Clean Water Act of 1977 (Including its 1987 Amendments)

These acts establish requirements for any facility or activity that has discharged or that will discharge wastes (including sediment because of accelerated erosion) that may interfere with the beneficial uses of receiving waters.

The administering agency for the above authority is the Los Angeles Regional Water Quality Control Board (RWQCB) Region 4, which is under the direction of the State Water Resources Control Board.

The Construction SWPPP will incorporate all appropriate erosion control measures during construction of the Project.

United States Department of Agriculture, Soil Conservation Service. National Engineering Handbook (1983), Sections 2 and 3

The USDA prescribes standards of technical excellence for the Soil Conservation Service (now the NRCS) for the planning, design, and construction of soil conservation practices.

The administering agency for the above authority is the NRCS.

The Applicant will adhere to the appropriate standards associated with the planning, design, and construction of soil conservation practices.

5.4.5.2 State

California Public Resources Code Section 25523(a); California Code of Regulations Sections 1752, 1752.5, 2300–2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (i)

These code authorities provide for protection of environmental quality. They require submission of information concerning potential environmental effects to the California Energy Commission (CEC) and the CEC's decision on the Application for Certification must include consideration of environmental protection.

The administering agency for the above authority is the CEC.

California Environmental Quality Act, California Public Resources Code Section 21000 et seq.; Guidelines for Implementation of the California Environmental Quality Act of 1970, 14 California Code of Regulations Sections 15000–15387, Appendix G

The CEQA guidelines specify that “[a] project will normally have a significant effect on the environment if it will ... (q) Cause substantial flooding, erosion or siltation; ... (y) Convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural lands.”

The administering agency for the above authority is the CEC.

The Project will comply with these CEQA requirements because BMPs will be implemented to mitigate significant erosion, siltation, or flooding effects. The Project Site will not require the conversion of prime agricultural land to non-agricultural use, and no Project components will traverse land covered by Williamson Act contracts. Thus, the Project will not cause a significant net loss of farmland.

California Porter-Cologne Water Quality Control Act of 1952, California Water Code Sections 13260–13269; 23 California Code of Regulations Chapter 9

These code authorities require adequate protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls. Discharge of waste earthen material into surface waters resulting from land disturbance may require the filing of a report of waste discharge (Water Code Section 13260[a]), and these codes provide for the issuance of waste discharge requirements regarding the discharge of any waste that can affect the quality of the waters of the state. Regarding potential surface water pollution from Project Site runoff, the waste discharge requirements may incorporate requirements based on the following sources of recommended methods and procedures:

- *Erosion and Sediment Control Field Manual* (SWRCB 1996)
- *Processes, Procedures and Methods to Control Pollution Resulting From All Construction Activity* (USEPA 1973) (Presents information on processes, procedures, and methods for controlling sediment, storm water, and pollutants from construction activities.)
- *Erosion and Sediment Control Handbook* (California Department of Conservation, Resources Agency 1978) (Provides procedures by which physical and climatic data and erosion control practices can be considered in assessing a site for determining the need for an Erosion Control Plan and for preparing such a plan.)

The administering agency for this authority is the Los Angeles RWQCB (Region 4).

The Applicant will develop an Erosion Control Plan for the Project to address surface water runoff.

California Land Conservation Act (Williamson Act), California Government Code Title 5, Part 1, Chapter 7, Sections 51200–51295

The Williamson Act provides for lowered property taxes for lands maintained in agricultural and certain open-space uses. The landowner enters into a contract with the county or city to restrict land uses to those compatible with agriculture, wildlife habitat, scenic corridors, recreational use, or open space. In return, the local authorities calculate the property tax assessment based on the actual use of the land instead of its potential value assuming full commercial development. To be eligible, the land must be designated by a city or county as an agricultural preserve, a scenic highway corridor, or a wildlife habitat area, or the land must be actively used for the 3 years immediately preceding the beginning of the contract as a salt pond, a managed wetland, a recreational area, or an open-space area.

The administering agency for this authority is the Department of Conservation, Office of Land Conservation.

The Project will not require the cancellation of any Williamson Act contracts.

5.4.5.3 Local

Los Angeles County Building Code, Appendix J

This section of the Building Code establishes grading and excavation requirements for the construction phase of the Project. This code is based on the 2007 edition of the California Building Code, Appendix J.

The administering agency for this authority is Los Angeles County Public Works, Carson office.

The Project will obtain a grading permit before commencing any earthwork.

Los Angeles County Building Code, Title 26

This section of the building code provides minimum standards to safeguard the public's safety and welfare by regulating the design, construction, quality of materials, use, occupancy, location, and maintenance of all dwellings, other structures, certain equipment, and grading.

Los Angeles County currently uses the 2008 edition of the Los Angeles County Building Code. This code is based on the 2007 edition of the California Building Code with amendments to meet local conditions.

The administering agency for this authority is Los Angeles County Public Works, Carson office.

The Project will follow all applicable sections of the building code during the construction phase of the Project.

City of Carson General Plan, Chapter 10, Air Quality Element

Chapter 10, Air Quality Element, of the General Plan is intended to protect the public's health and welfare by implementing measures that are designed to allow the South Coast Air Basin to attain federal and state air quality standards.

State of California Government Code Section 65302(d) provides statutory requirements for the Conservation Element and serves as the applicable Government Code section for the Air Quality Element.

The administering agency for this authority is the City of Carson Planning Division.

The Project will comply with all federal, state, and local air quality standards during the construction phase of the Project.

5.4.5.4 Agencies and Agency Contacts

The agencies with jurisdiction to issue applicable permits and/or enforce LORS related to soil resources and agriculture are shown in Table 5.4-3, Agency Contacts.

**Table 5.4-3
Agency Contacts**

Agency	Contact	Title	Address	Telephone	E- mail Address
United States Department of Agriculture Natural Resources Conservation Services	Raul Ramirez	Soil Conservationist	5000 California Avenue Suite 100 Bakersfield, CA 93309	661-336-0967	raul.ramirez@ca.usda.gov
California Energy Commission	Facilities Siting Division Terry O'Brien	Deputy Director	1516 Ninth Street, Sacramento, CA 95814	916-654-3924	tobrien@energy.state.us.gov
California Department of Conservation	Division of Land Resource Protection Brian Leahy	Assistant Director	801 K Street, MS 18-01 Sacramento, CA 95814-3528	916-324-0850	Brian.leahy@conservation. ca.gov
Los Angeles Regional Water Quality Control Board, Region 4	Renee Purdy	Basin Planner	320 West Fourth Street, Suite 200 Los Angeles, CA 90013	213-576-6783	rpurdy@waterboards.ca.gov
California Department of Water Resources	Water Quality Bruce Fujimoto	Water Resources Control Engineer	1001 I Street, Sacramento, CA 95814	916-341-5523	Bfujimoto@waterboards. ca.gov
Los Angeles County Building and Safety	Carson Office Michael Dorta	Building and Safety	701 East Carson Street Carson, CA 90745	310-830-1386	mdorta@carson.ca.gov
City of Carson Planning Division	Sheri Repp- Loadsman	Planning Manager	701 East Carson Street Carson, CA 90745	310-830-7600 Ext. 1773	srepp@carson.ca.us

5.4.5.5 Applicable Permits

Table 5.4-4, Required Permits, lists all applicable permits for the Project in the area of agriculture and soils.

**Table 5.4-4
Required Permits**

Issuing Agency	Type of Permit Required	Schedule
Los Angeles Regional Water Quality Control Board- Region 4	Notice of Intent	Before construction
	National Pollutant Discharge Elimination System	
	General Construction Storm Water Permit	
City of Carson and Los Angeles County	Grading Permit, Building Permit	30 days
	Development Permit Requirements to be met	Before construction

Sources: SWRCB, 2009a, 2009b; Los Angeles County, 2008b.

5.4.6 References

- ASTM (American Society for Testing and Materials). 2007. ASTM D698. "Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft³ [600 kN-m/m³])." ASTM International, West Conshohocken, PA.
- CCR (California Code of Regulations). 2005. Title 14, Natural Resources, Chapter 3 Guidelines for Implementation of the California Environmental Quality Act (CEQA). Amended July 27, 2007.
- California Department of Conservation. 1978. *Erosion and Sediment Control Handbook*. Sacramento, CA.
- California Department of Conservation. 2002. Farmland Mapping and Monitoring Program.
- City of Carson. 2004. General Plan.
- Los Angeles County. 2008a. Grading Guidelines. Accessed at <http://dpw.lacounty.gov/bsd/lib/fp/General%20Information/Grading%20Guidelines.pdf> on 11 July 2008.
- Los Angeles County. 2008b. Building Code. Title 26. Accessed at <http://ordlink.com/codes/lacounty/index.htm> on 11 July 2008.
- Crandall (Leroy Crandall and Associates). 1986. Final Geotechnical Investigation: Proposed Cogeneration Unit and Proposed Transmission Line, Watson Refinery, Carson, CA for the Atlantic Richmond Company. 14 March 1986.
- International Conference of Building Officials. 1994. Uniform Building Code. Whittier, CA.
- LADPW (Los Angeles County Department of Public Works). 2006. Water Resources Division. *Hydrology Manual*.
- NRCS (Natural Resources Conservation Service). 2006. U.S. General Soil Map (STATSGO) for California. Accessed at <http://soildatamart.nrcs.usda.gov> on 18 June 2007.
- NRCS (Natural Resources Conservation Service). 2007a. Personal communication between Andrea Parker, URS, and Peter Fahnestock, NRCS, Soil Scientist, Victorville Service Center. 16 February 2007; 15 May 2007; 29 May 2007.
- NRCS (Natural Resources Conservation Service). 2007b. Official Soil Series Descriptions. Accessed online at: <http://soils.usda.gov/technical/classification/osd/index.html> on 15 May 2007.
- NRCS (Natural Resources Conservation Service). 2007c. National Soil Survey Handbook (NSSH). Accessed online: at <http://soils.usda.gov/technical/handbook/> on 18 June 2007.
- Retec. 2006. Memorandum: Geotechnical Summary and Recommendations.
- SWRCB (State Water Resources Control Board). 1996. *Erosion and Sediment Control Field Manual*.
- SWRCB (State Water Resources Control Board). 2009a. NPDES Program. Accessed at http://www.waterboards.ca.gov/water_issues/programs/npdes on 11 February 2009.

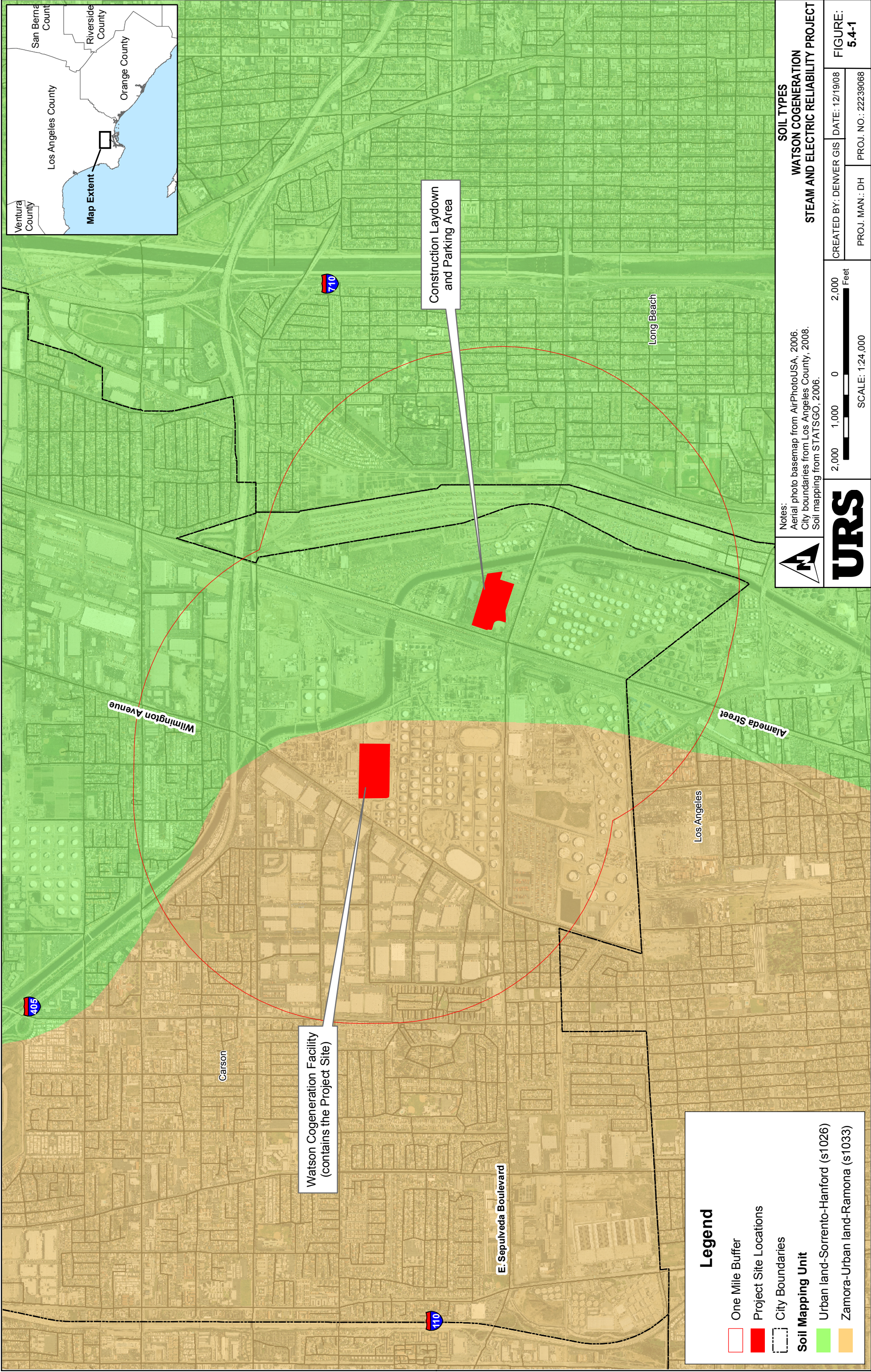
SWRCB (State Water Resources Board). 2009b. Los Angeles Regional Water Quality Control Board NPDES Program. Accessed at http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/sw_construction.shtml on 11 February 2009.

USDA (U.S. Department of Agriculture). 1983. Soil Conservation Service. National Engineering Handbook, Sections 2 and 3. U.S. Govt. Print. Off. Washington, DC.

USDA (U.S. Department of Agriculture). 2006a. Natural Resources Conservation Service. Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>

USDA (U.S. Department of Agriculture). 2006b. Natural Resources Conservation Service. Official Soil Series Descriptions (OSD). <http://soils.usda.gov/technical/classification/osd/index.html>.

USEPA (U.S. Environmental Protection Agency). 1973. *Processes, Procedures and Methods to Control Pollution Resulting From All Construction Activity*.



Adequacy Issue: _____ Technical Area: Soils Project Manager: _____	Adequate _____ Inadequate _____ Project: _____ Docket: _____	DATA ADEQUACY WORKSHEET Watson Cogeneration Steam and Electric Reliability Project Revision No. _____ Date _____ Technical Staff: _____ Technical Senior: _____
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Siting Regulations	Information	AFC Page Number And Section Number	Adequate Yes Or No	Information Required To Make AFC Conform With Regulations
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the Project, the measures proposed to mitigate adverse environmental impacts of the Project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	Section 5.4.1; pages 5.4-1 through 5.4-5 Section 5.4.2; pages 5.4-6 through 5.4-9 Section 5.4.4; pages 5.4-9 through 5.4-10		
Appendix B (g) (15) (A)	A map at a scale of 1:24,000 and written description of soil types and all agricultural land uses that will be affected by the proposed Project. The description shall include:	Figure 5.4-1		
Appendix B (g) (15) (A) (i)	The depth, texture, permeability, drainage, erosion hazard rating, and land capability class of the soil;	Section 5.4.1.1, Table 5.4-1; page 5.4-3 Section 5.4.1.1; pages 5.4-2 through 5.4-5		
Appendix B (g) (15) (A) (ii)	An identification of other physical and chemical characteristics of the soil necessary to allow an evaluation of soil erodibility, permeability, re-vegetation potential, and cycling of pollutants in the soil-vegetation system.	Section 5.4.1; pages 5.4-1 through 5.4-5 Section 5.4.2; pages 5.4-6 through 5.4-9		
Appendix B (g) (15) (A) (iii)	The location of any proposed fill disposal or fill procurement (borrow) sites; and	Section 5.4.2.2; pages 5.4-7 through 5.4-8		
Appendix B (g) (15) (A) (iv)	The location of any contaminated soils that could be disturbed by project construction.	Section 5.4.2.2; pages 5.4-7 through 5.4-8		
Appendix B (g) (15) (C)	An assessment of the effects of the proposed Project on soil resources and agricultural land uses. This discussion shall include:	Section 5.4.1; pages 5.4-1 through 5.4-5 Section 5.4.2; pages 5.4-6 through 5.4-9		

Adequacy Issue: _____ Technical Area: Soils Project Manager: _____	Adequate _____ Inadequate _____ Project: _____ Docket: _____	DATA ADEQUACY WORKSHEET Watson Cogeneration Steam and Electric Reliability Project Revision No. _____ Date _____ Technical Staff: _____ Technical Senior: _____
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SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (15) (C) (i)	The quantification of accelerated soil loss due to wind and water erosion; and	Section 5.4.2.1; page 5.4-6 Section 5.4.2.2; pages 5.4-7 through 5.4-8 Section 5.4.2.3; page 5.4-9 Section 5.4.2.4; page 5.4-9 Section 5.4.2.5; page 5.4-9 Section 5.4.3; page 5.4-9 Section 5.4.1.1, Table 5.4-1; page 5.4-3		
Appendix B (g) (15) (C) (iii)	The effect of power plant emissions on surrounding soil-vegetation systems.	Section 5.4.2.2; pages 5.4-7 through 5.408		
Appendix B (h) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed Project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	Section 5.4.5, Table 5.4-2; pages 5.4-10 through 5.4-11		
Appendix B (h) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Section 5.4.5, Table 5.4-2; pages 5.4-10 through 5.4-11		

Adequacy Issue:

Adequate

Inadequate

Revision No.

Date

Technical Area:

Soils

Project:

Watson Cogeneration Steam and Electric Reliability Project

Technical Staff:

Project Manager:

Docket:

Technical Senior:

Siting Regulations	Information	AFC Page Number and Section Number	Adequate Yes or No	Information Required To Make AFC Conform With Regulations
Appendix B (h) (3)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	Section 5.4.5.4, Table 5.4-3; page 5.4-15		
Appendix B (h) (4)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	Section 5.4.5.5, Table 5.4-4; page 5.4-15		

